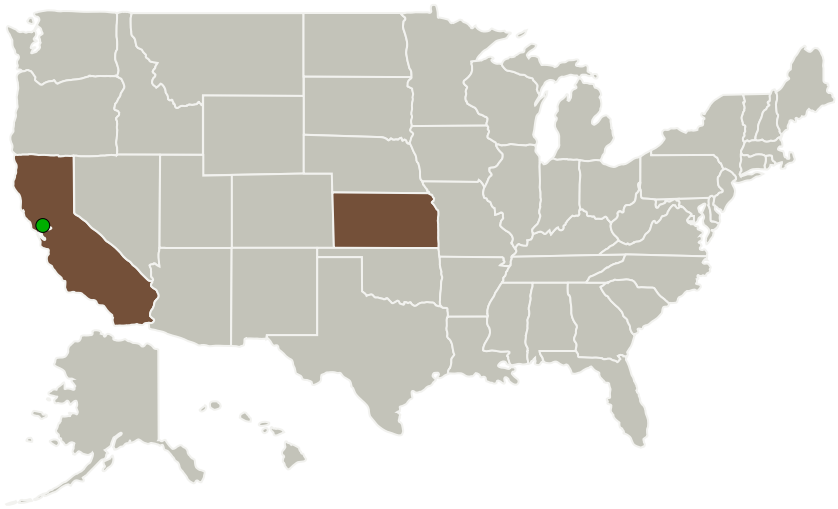
AirCore Reusable InSitu Sampler for CO2 and Trace Gas Measurements, Phase I

Completed Technology Project (2012 - 2012)

Project Introduction

The AirCore is a simple and novel atmospheric air column sampler to validate satellite observation data of greenhouse gases, using a lightweight, inexpensive coated stainless steel coil. The simple design of the leads to cost savings during manufacture and operation. The addition of a UAV to the AirCore system provides much needed functionality and flexibility to the end user of the product: it returns the AirCore to a user-defined location, so that the coil can be retrieved and analyzed rapidly. The low cost of the sensor combined with the low cost of its deployment will yield cost savings of up to 2/3 over current aircraft-based atmospheric sampling methods. In Phase I, critial Aircore sampler development will be undertaken. Next, the Aircore will be integrated onto a UAV and flight tested. In Phase II, further refinement of the Aircore and UAV design, and the operational procedure will be undertaken.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
KALSCOTT Engineering, Inc.	Lead Organization	Industry	Lawrence, Kansas
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

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Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
California	Kansas

Project Transitions

February 2012: Project Start

August 2012: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137908)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

KALSCOTT Engineering, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

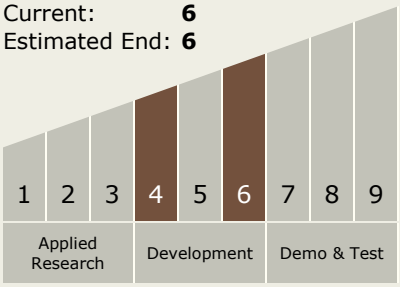
Carlos Torrez

Principal Investigator:

Tom Sherwood

Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.2 Energy Storage
    - TX03.2.3 Advanced Concepts for Energy Storage

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System